



SUMMER ILLINOIS MATH CAMP





SIM CAMP EPSILON, JUNE 7-11, 2021

- For students starting 8th-10th grade Fall 2021, ages 12-15
- Open to students who will start algebra in the fall or have taken some algebra already

Graphs, Paths, and Bridges. A riverside town contains several bridges. Can a visitor take a walking tour if each bridge must be crossed exactly once? This course equips campers with the tools to analyze this question, and others, through the lens of graph theory.

Topological Invariants: How to Distinguish Spaces. Have you ever wondered about why the countries on a world map seem distorted when compared to the globe? Or about what is the shape of the universe? To find answers to these questions, mathematicians study spaces and their invariants. We will use these invariants to answer many related and interesting questions about spaces.



SIM CAMP DELTA, JUNE 21-25, 2021

- For students starting 10th-12th grade Fall 2021, ages 15-18
- Open to students who have taken at least one year of algebra

Topological Invariants: How to Distinguish Spaces. Have you ever wondered about why the countries on a world map seem distorted when compared to the globe? Or about what is the shape of the universe? To find answers to these questions, mathematicians study spaces and their invariants. We will use these invariants to answer many related and interesting questions about spaces. This is a more advanced version of the corresponding Epsilon course.

The Continued Fraction Universe. In this course, students will learn how to use Continued Fractions to identify patterns and solve Diophantine equations. We will explore the leaf growth patterns in plants and decide what gears to use when building a solar system model. Along the way, we will introduce standard problem-solving techniques and math ideas such as induction, n -ary expansions, limits, and probability.

FREQUENTLY ASKED QUESTIONS

How does virtual SIM Camp work?

In the interest of safety, SIM Camp will be held entirely online this year. Courses and activities will be held over Zoom with the use of interactive online tools and plenty of breaks throughout the day. All students must have access to a reliable internet connection.

Who is the target audience for SIM Camp?

All mathematically curious students meeting the appropriate grade and age requirement are welcome to apply! We especially encourage gender and racial minorities typically underrepresented in STEM to apply!

Do I need to be on math team to enjoy SIM Camp?

No! While some of the topics will be similar to some competition math, most of it will be different. The focus will not be in solving problems quickly and alone. Instead, the problems that we do in camp can be open ended, and often have more than one solution. Campers spend a lot of time working in groups to discuss problems and come up with solutions together. Thus, having many different perspectives helps the group solve problems better!

How much does SIM Camp cost?

SIM Camp is \$25/student. Need-based scholarships are available, so

please do not let the cost of camp discourage you from applying! Tuition helps us cover some of our staff costs and supply kit fees, and also reserves your space at camp.

Do I need to have good grades in math class to participate in SIM Camp?

We are looking for students who are enthusiastic about math, and this does not always mean getting good grades. If you like making sense of ideas, looking for patterns, and figuring out why things work, SIM Camp is for you!

Is SIM Camp a good place to get tutoring or get ahead in school over the summer?

SIM Camp is not a tutoring program or summer school. It is an opportunity to play with fun mathematical ideas that are not usually covered in school.

When will we hear about acceptances?

We will not consider applications until after May 3, and we will start sending decisions by May 7. We will continue accepting applications until all camps are full.

Questions?

For more information, or if you have other questions about the program, please contact us at math-simcamp@illinois.edu.

APPLICATIONS

To apply, visit our website at math.illinois.edu/SIM.

SIM Camp is \$25/student with scholarships available. Supply kits will be provided.

Priority deadline to apply is May 3, 2021.



ABOUT SIM CAMP

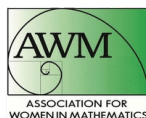
Organized by graduate students, the Summer Illinois Math (SIM) Camp is a week-long math day camp for middle and high school students hosted by the Department of Mathematics at the University of Illinois at Urbana-Champaign.

Campers will see the creative, discovery-driven side of mathematics. By showing them some of the ways mathematicians approach problems, SIM Camp hopes to encourage students to continue studying mathematics beyond the high school level.

SPONSORS

Mathematical Association of America

Department of Mathematics, the Illinois Geometry Lab, and
the Association for Women in Mathematics at the
University of Illinois Urbana-Champaign



Department of Mathematics

University of Illinois Urbana-Champaign

273 Altgeld Hall

1409 W. Green Street, Urbana, IL 61801

217.333.3350 | math.illinois.edu